

Application No.: 10/060,080Docket No.: 30012365-1 US (1509-272)REMARKS

The Office Action of August 19, 2005 has been considered in detail, and Applicants' hereby submit their comments to the Office Action below.

Rejection Under 35 U.S.C. §103

Applicants traverse the rejection of claims 1, 2, 4, 5, 7-9 12 and 13 under 35 U.S.C. §103(a) as being obvious over Hughes (U.S. Patent 6,493,772), in view of Suzuki et al. (U.S. Patent 6,728,809).

Applicants disagree with the Examiner's opinion that the combination of Hughes and Suzuki et al. discloses all the features of Claim 1 of the present application. Applicants do not agree with the allegation in the Office Action that Hughes initiates a response to a SCSI inquiry signal by the peripheral device for a predetermined time in response to receipt of a SCSI command write/read signal and a received SCSI inquiry signal as required by claim 1.

Hughes discloses a system for monitoring and queuing instructions issued by a host system, i.e. a computer, to a SCSI controller. Each instruction issued by the host system is given a time stamp and stored in an execution queue as a data structure. Contemporaneously, pointers to the location of each data structure relating to each instruction are stored in a monitor queue; see column 8, lines 36 to 49.

The SCSI controller stores a time interval which indicates a "reasonable time period" for executing an instruction and periodically cycles through the monitor queue and compares each time stamp with a "reasonable time period". If the time stamp indicates an instruction has taken longer than the "reasonable time period" the controller sends a "BUSY" signal to the host

Application No.: 10/060,080Docket No.: 30012365-1 US (1509-272)

system. The data structure of the instruction is then removed from the execution queue.

As the Examiner concedes, no attempt is made by Hughes to delay any of the instructions by a predetermined period. Rather, instructions are queued in the order that they were issued and processed as resources become available. If an instruction has not been completed within a reasonable time period it is removed from the execution queue.

Furthermore, the operation of the SCSI controller described by Hughes does not depend on the type of instructions which are received from the host system. The operation of the SCSI controller is the same regardless of the instruction that is received from the host system; see column 8 lines 60 to 67. Thus, read/write instructions are queued along with any inquiry instructions, and all the instructions are processed in order when the required resources become available. The SCSI controller of Hughes does not, therefore, initiate a response to a SCSI inquiry signal by the peripheral device for a predetermined time in response to receipt of a SCSI command write/read signal and a received SCSI inquiry signal as required by claim 1. Since Hughes does not disclose what the Office alleges, the rejection of claim 1 is wrong.

Suzuki does not cure the Hughes deficiencies. Suzuki is concerned with an IEEE 1394 interface, often referred to as FireWire. Because Suzuki is not concerned with a small computer system interface (SCSI), as disclosed by Hughes, one of ordinary skill in the art would not have combined the Hughes SCSI arrangement and Suzuki.

The final paragraph of column 2 of Suzuki provides further rationale why the references would not be combined by one of ordinary skill in the art. In this paragraph, Suzuki describes a system which monitors the time that "nodes", e.g., peripheral devices or computers, take to respond to instructions. These times are stored as time-out periods and subsequently used in the

Application No.: 10/060,080Docket No.: 30012365-1 US (1509-272)

monitoring of future instructions sent to the same node. It is not seen how this is relevant to the Hughes SCSI arrangement.

The Examiner also refers to column 8, lines 3 to 9 of Suzuki, which describe the process mentioned above in relation to a system having bridges between buses - the nodes being connected to the buses. Once again, the time taken by nodes to respond to instructions is monitored and stored for use as time-out periods in the monitoring of future instructions to that node.

As discussed in column 8, lines 16 to 28 of Suzuki, renewing the time-out period makes it possible to provide a control unit with an "optimum" time-out period which is resilient against fluctuations in processing time due to changes in the state of nodes.

The mere existence of delays between sending an instruction to a node and receiving a response is not an indication that delays are desirably incorporated into the Suzuki system. In fact, Suzuki is specifically targeted, reducing undue delays which arise when a node fails to receive an instruction or is too busy to respond.

Suzuki, therefore, fails to describe a system in which a response to a request is purposefully delayed. In particular, Suzuki does not delay an instruction by a predetermined period. At most, Suzuki indicates that when an instruction "times-out" an identical instruction can be resent a predetermined number of times until the instruction is successfully received. However, this is not a delay, but a conventional method of operation.

Indeed, if the method of Suzuki were to be combined with the teachings of Hughes, one of ordinary skill would not arrive at the subject matter of the independent claims. Rather, the system of Hughes would queue instructions as usual and the "reasonable time period" stored by the SCSI controller would be updated, as disclosed by Suzuki, depending upon the length of time

Application No.: 10/060,080Docket No.: 30012365-1 US (1509-272)

taken for the previous instruction to be completed, i.e., the "time-out" period disclosed by Suzuki would be used as the "reasonable time period" stored by the Hughes SCSI controller. The SCSI controller would not, however, delay a response to an inquiry instruction for a predetermined period.

In view of the above, a person of ordinary skill in the art would not consider combining the teachings of Hughes and Suzuki. Furthermore, even if such a combination were to be made, the resulting combination of teachings would not lead a person of ordinary skill to the subject matter of applicants' independent claims. It is, therefore, submitted that Claim 1 is not rendered obvious by Hughes in view of Suzuki.

Independent claim 4 contains the same features as claim 1, and the arguments presented above also apply to this claim. Further, claim 4 is directed to a tape data storage device that comprises a SCSI controller, i.e., the SCSI controller is an integral part of the tape data storage device. Claim 4 states the SCSI controller controls the buffer memory, tape mechanism, and SCSI driver of the data storage device. In contrast, the Hughes SCSI controller does not form an integral part of a data storage device. Instead, the SCSI controller of Hughes merely acts as a gateway between SCSI bus 325 and the host peripheral bus 305; see Hughes at column 5, lines 1 to 16. In this way, the Hughes SCSI controller transfers instructions and data between the host computer and a plurality of disk drives on the SCSI bus. The Hughes SCSI controller does not, however, control a buffer memory adapted to temporarily store data to be read from or written to a tape data storage media, or a tape drive mechanism adapted to accept the tape data storage media. Therefore, it is submitted that Hughes fails to teach or suggest the tape data storage device of claim 4.

Application No.: 10/060,080Docket No.: 30012365-1 US (1509-272)

The arguments presented above in relation to claim 1 are equally applicable to independent claim 7. In addition, the driver of claim 7 includes "a delay timer" which is adapted to cause the peripheral device to delay initiating a response to an inquiry instruction for a predetermined period measured by the delay timer in response to receiving a write/read instruction. No such delay timer is present in Hughes, which merely processes instructions when resources became available, or Suzuki, which merely monitors the time-out period for a single instruction.

Applicants traverse the rejection of independent claim 11 as being obvious in view of Hughes, Suzuki and Latif, U.S. Patent 5,613,076. Claim 11 recites the process of carrying out a write/read instruction during a bus free period comprising an inquiry period. This is possible because of the delay introduced in responding to the inquiry signal.

Hughes does not disclose using bus free periods in an inquiry period, but indicates instructions are queued and processed in order if resources are available. Suzuki, which is directed to FireWire rather than SCSI, also fails to disclose the use of bus free periods in an inquiry period and, instead, teaches that instructions should be resent after a time-out period. Contrary to the opinion put forward by the Examiner, Latif does not disclose the use of bus free periods in an inquiry period. Instead, Latif uses bus free periods that exist before arbitration of the SCSI bus. This is a normal bus free period which is present when no devices have control of the SCSI bus. Since none of the cited prior art documents (i.e. Hughes, Suzuki, and Latif) describe delaying a response to an inquiry instruction, all of these prior art systems suffer from the very problems which is solved by the arrangement of claims 11 (i.e... a conflict between a read/write instruction and an inquiry instruction). Therefore, Claim 11 is also inventive over a combination of the teachings of these documents. Should the Examiner maintain his rejection

Application No.: 10/060,080Docket No.: 30012365-1 US (1509-272)

against this claim, he is respectfully requested to explain why he believes that the bus-free period described by Latif comprises the bus-free period of an inquiry initiated by the host.

With regard to independent Claims 12 and 13, the arguments given above in relation to claims 1 and 7 apply equally to these claims. In particular, claims 12 and 13 recite the same features as claim 1 in combination with the delay timer of claim 7.

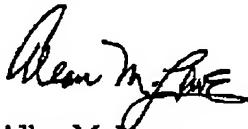
The dependent claims are allowable for the same reasons advanced for the independent claims.

In view of the foregoing amendments and remarks, favorable reconsideration and allowance are in order.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 08-2025 and please credit any excess fees to such deposit account.

Respectfully submitted,

Simon PELLY *et al.*



Allan M. Lowe
Registration No. 19,641

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400
Telephone: 703-684-1111
Facsimile: 970-898-0640

Date: November 21, 2005

AML/dll